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CLARK FORK SUPERFUND SITES
MASTER PLAN

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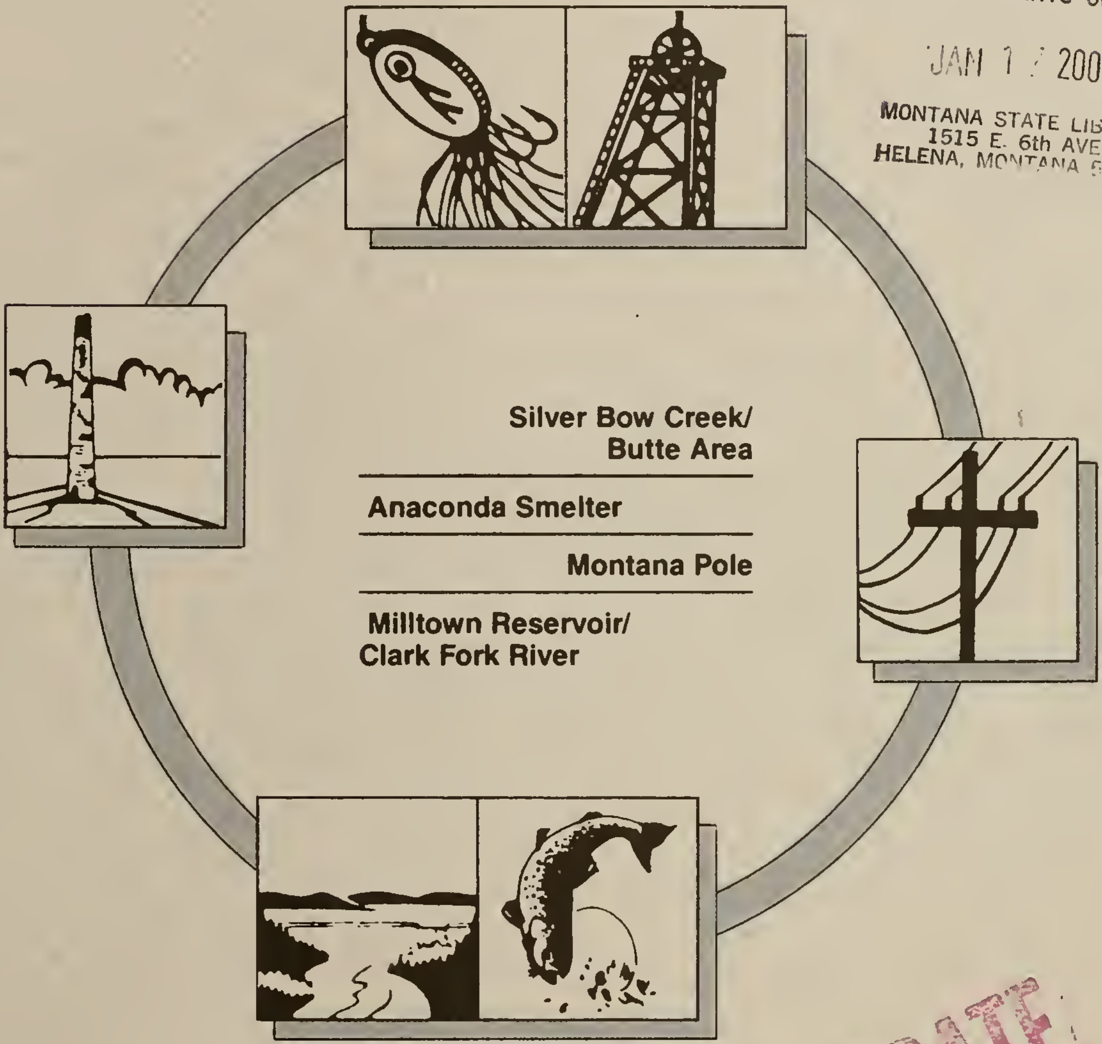

Silver Bow Creek/
Butte Area

Anaconda Smelter

Montana Pole

Milltown Reservoir/
Clark Fork River

1992 UPDATE

U.S. Environmental Protection Agency
Montana Department of Health & Environmental Sciences
Atlantic Richfield Company

June 1992

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Clark Fork Superfund Sites Master Plan Update

Prepared by
The Master Plan Work Group

U.S. Environmental Protection Agency

Montana Department of Health and
Environmental Sciences

Representatives From the Communities of

Butte
Anaconda
Missoula

Atlantic Richfield Company

June 1992

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PREFACE

The last Master Plan for the Clark Fork Superfund Sites was issued in November, 1990. That Plan presented overall objectives and priorities for the Superfund activities, as well as detailed computerized schedules. The Plan also indicated there would be periodic updates to describe actions that affect the Superfund cleanup process.

This document serves as the 1992 update to the Clark Fork Superfund Sites Master Plan. It focuses on lessons learned during the past year and briefly describes actions that EPA, the State, and ARCO are taking to try to resolve the issues that cause delays or disruption in the cleanup process. It also identifies accomplishments of the past year, and looks ahead at the projected cleanup activities that will hopefully occur during 1992 and 1993. Finally, this update includes summary schedules for each of the major operable units (projects) as they have been redefined at the Clark Fork Sites.

This document is intended to serve as the basis of comparison for schedule updates for 1993 and 1994.

I. Lessons Learned in Implementing the Master Plan

1. Expedited response actions (ERAs) take longer than anticipated. This is particularly true for the use of ERAs at technically or legally complex sites (e.g., Lower Area One/Colorado Tailings). Coordination requirements with other agencies (State Historic Preservation, Fish and Wildlife Service, etc.) also tend to lengthen the cleanup process when they are not given early enough attention.

2. Due to the vast size and complexity of the potential soil and water contamination at the Anaconda Smelter Site, there is a need to obtain more comprehensive data earlier in the site investigation process in order to plan future response activities.

3. EPA's requirement to use "Model" Orders to conduct investigations and implement remedies has been very controversial. Negotiation of model orders for investigations and removal actions has taken immense resources and time. Investigations and cleanup actions do not occur until legal documents are in place.

4. Because of late field starts and complex data quality control issues, key data reports, including interpretation (site characterization), have not been submitted well in advance of the following field season. This has led to delayed or inadequately planned supplemental field investigations (which are often required at large mining sites).

5. Delays occur when there is not an appropriate match-up of technical and legal resources to implement a particular activity. Staff in both areas are frequently overloaded. There is concern that schedules for some on-going or planned projects may be too optimistic given present work loads.

6. Differing roles between EPA and the State can lead to delays in agency decision-making.

7. Extra efforts to encourage community involvement in the Superfund process generally have been productive. Delays in decision-making often occur when the public is not adequately involved.

8. Differences over human health-related cleanup action levels are probably the greatest source of conflict between the agencies and PRPs and will take the longest time (and the most resources) to resolve.

9. Lack of clear agency guidance or standards in the area of environmental risk assessment increases the cost and time to conduct complex site-specific studies.

10. The lack of permanent disposal sites for mine waste has complicated and delayed response action decisions (Arbiter/Beryllium ERA, Lower Area One ERA).

11. Lack of approved basin-wide data quality/data management protocols has often meant duplication of effort and confusion among all parties.

II. Making the Master Plan Work - Mid-Course Adjustments

The basic framework and premises for action and the priorities for initiating Superfund activities have not changed significantly from the 1990 Master Plan. However, as noted in the 1990 Plan, the priority setting and sequencing of activities must be a flexible, dynamic process that monitors progress and accommodates change whenever appropriate. The following discussion indicates areas where mid-course corrections and adjustments have been made to deal with the issues presented in Section I. The discussion items listed below correspond to the numbered items in Section I.

1. Future expedited response actions (ERAs) should only be undertaken if it can be demonstrated that the action proposed is fairly simple and the need is great. Existing resources should be focused on completing the on-going ERAs and the longer-term remedial investigation/feasibility studies (RI/FSs). For critical human health and environmental needs, time critical removals should be considered.

   To improve coordination on all projects, an agreement for historic resource preservation has been signed. Improved procedures for dealing with wetlands and water rights have also been developed.

2. It is proposed to restructure the operable units at the Anaconda Smelter Site to define them more on a contaminated media/remediation basis rather than a geographical basis. This effectively reduces the number of operable units subject to RI/FS activities from 10 to 5. This has been more clearly described in an updated Anaconda Site Management Plan. The 5 major operable units are: Flue Dust, Smelter Hill, Old Works/East Anaconda Development Area, Soils, and Water and Wastes. The plan also describes the regional scoping investigations for soils,

mine wastes, and water that are being or will be conducted. These investigations will provide data to be used in the subsequent remedial site investigation.

3. Negotiated "Model" Orders for the Clark Fork Superfund Sites are in place for three separate types of activities: Removals (Time Critical and Non-Time Critical Removal Actions both use the same Order), Engineering Evaluation/Cost Analysis studies, and Remedial Investigation/Feasibility Studies. Although some progress was made on a model Consent Decree during negotiations on the Warm Springs Ponds, this was not brought to completion. The exercise instead resulted in development of a model Unilateral Order. It is hoped that further progress on a negotiated model Consent Decree that builds, where possible, on the previous negotiations, will be made during negotiations on the Flue Dust operable unit. Further investigations at the Anaconda Smelter Site will be conducted under Amendments to existing Anaconda Smelter Site Consent Orders.

4. EPA, MDHES, and ARCO have agreed that data reports (validated and assessed for useability to the extent possible) will be submitted prior to holding annual meetings early in the year. It has also been agreed that draft Sampling and Analysis Plans (SAPs) for field work to be conducted later in the year will be submitted before the beginning of the year. If necessary, these plans will be modified at, or immediately following, the annual meeting. These changes should help to ensure that supplemental field investigations are planned early enough to initiate field activities in late spring/early summer.

5. Adequate technical and legal resources are needed by all parties to facilitate the Superfund "process". Model orders and efficient scheduling will help, but careful resource allocation must be factored into the Master Plan schedules.

   Given that upstream source control remains an over-riding priority, it is proposed that some downstream activities be deferred until further upstream cleanup occurs. On-going site characterization would continue and be completed at Milltown but, absent a critical need for remediation, the feasibility study would be deferred for some period. EPA will describe its decision to defer the Milltown FS in a report that will be submitted for public review and comment. The Clark Fork River would be addressed through a continuing fish toxicity screening level study, but scoping activities for an RI/FS would be deferred until additional resources are available to do this work properly (now projected to be in 1993).

6. EPA and the State are continuing to better define their respective roles which should facilitate decision-making. The goal is to approach the Superfund activities as a team.

7. The agencies and ARCO intend to maintain and improve where possible their high level of community involvement activities.

8. The establishment of cleanup action levels will occur through specific remedy selection processes. Action levels will likely be determined for the following land uses: residential, occupational, recreational, and possibly agricultural/open space.

The risk assessments for the Butte Priority Soils and the Old Works/East Anaconda Development Area operable units to be conducted during 1992 will likely result in action levels for several of these scenarios.

9. EPA believes the environmental risk assessment at the Milltown Reservoir and the fish toxicity investigation at the Clark Fork River are based on good science and will produce very useful results. The Montana EPA Office continues to press for more specific guidance to be developed in this area by the national EPA organization.

10. ARCO has initiated, or agreed to initiate, investigations in conjunction with EPA, the State, and local governments to site potential mine waste disposal sites at several locations in the upper Clark Fork basin. Potential sites may be identified in the following counties: Silver Bow, Deer Lodge, Powell, and Missoula.

11. ARCO has developed and submitted basin-wide data quality/data management protocols. EPA and the State are reviewing these documents with the intent to have final approved documents early in 1992. These documents would then be used at all on-going and future Clark Fork projects. The Clark Fork basin-wide documents include: Laboratory Analytical Protocol (LAP); Quality Assurance Project Plan (QAPP); Data Management/ Data Validation Plan (DM/DV); Standard Operating Procedures (SOP); and a Standard XRF Protocol.

III. Major Accomplishments in 1991

1. Many of the contaminated waste dumps in Butte have been removed and sites reclaimed.

2. A decision to remove the wastes from the Colorado Tailings and Butte Reduction Works (LAO) and dispose of them at the Opportunity Ponds has been made.

3. Steady progress has been made in the Berkeley Pit mine-flooding investigation.

4. Remedial investigations and feasibility studies have been initiated (Administrative Orders signed with ARCO) at Montana Pole, Rocker, and Streamside Tailings.

5. The Mill-Willow Bypass was cleaned (430,000 cu. yds) and the north-south berms at the Warm Springs Ponds were strengthened. An order was issued to ARCO for implementation of an interim remedy for the active area. Much of this work was completed. Alternatives have been developed for the remediation of the inactive area.

6. Agreement was reached on cleanup of selected residential yards in Anaconda.

7. Final response action decisions were made for Arbiter/Beryllium wastes and Old Works wastes within the 100-year floodplain.

8. A final decision was made for cleaning up the flue dust at the Anaconda Smelter Site.

9. Steady progress has been made in the Milltown Reservoir investigation and risk assessment.

10. Work has begun (supplemental investigations) at the Old Works/East Anaconda Development Area but the Administrative Order has yet to be amended.

11. Significant progress was made in siting a mine waste repository in Butte-Silver Bow County with extensive involvement by local citizens.

12. Significant progress has been made on basin-wide issues:

    - Data quality and management
    - Surface water monitoring program
    - Cultural/historic resource evaluations
    - Institutional controls
    - Computerized project scheduling
    - Wetlands evaluations
    - Water rights coordination

IV. Projected Cleanups in 1992 and 1993

1. The removal of wastes from the Colorado Tailings and Butte Reduction Works (LAO) is scheduled to begin. The wastes will go to the North Central Opportunity Ponds.

2. Selected residential yards in Butte above a defined lead/arsenic action level are expected to be cleaned up.

3. A mine waste disposal site will be constructed on Smelter Hill.

4. Arbiter/Beryllium wastes will be removed to a mine waste disposal site on Smelter Hill.

5. Flue Dust piles will begin to be treated and placed in a mine waste disposal site on Smelter Hill.

6. Portions of the Old Works site near Warm Springs Creek will be stabilized to insure safe passage of a 100-year flood.

7. A new treatment system will be constructed at the Warm Springs Ponds.

8. The inactive portion of the Warm Springs Ponds will be remedied through wet-closure cells and/or capping in place.

9. Selected residential yards in Anaconda above a defined arsenic action level will be cleaned up.

V. Conclusions

1. While it is necessary to keep important on-going investigations on schedule, attention must be given to implementing the decisions already made. These decisions are made in an enforcement mode which requires the agencies and ARCO to try to reach agreement, where possible, on the action to be implemented. The pace of cleanup depends to a large extent on the ability of the parties to reach timely agreement. Successful negotiation of an acceptable model consent decree will facilitate future agreements.

2. The issues that frequently slow down a project are lack of uniform basin-wide guidance or protocols, delays in seeking input from outside agencies, legal complications due to unresolved provisions in orders and decrees, and bringing new staff and contractors up to speed. Current efforts to deal with all these issues should facilitate progress.

3. There is a concern that the current intense level of Superfund activities may not be sustainable over the long term. Efforts to gain efficiency through development of region-wide protocols dealing with problem issues should help considerably.

   It is considered necessary to slow down or defer some of the proposed future activities at Milltown and the Clark Fork River until further upstream cleanup occurs and additional resources become available. There will continue to be the need to re-examine priorities to assure that limited resources are being devoted to the highest priority projects.

4. It is critical that investigations be conducted to locate potential mine waste disposal sites at various locations in the basin.

5. It is critical that efficient planning be done for every project. This requires constant review by all parties and mid-course adjustments as necessary.

VI. Updated Project Schedules

Since the 1990 Master Plan and schedules were developed, there have been numerous refinements and adjustments to the schedules. These changes reflect the reality that dealing with all the issues discussed above takes longer than originally planned. The changes also reflect some minor reordering of priorities (affecting Milltown Reservoir and Clark Fork River activities) and some fine tuning in the sequencing of RI/FS activities (data submittals and convening annual site meetings). As indicated earlier, the schedules shown in this report will serve as the basis of comparison for schedule updates in 1993 and 1994.

It should be pointed out that the Anaconda Old Works RI/FS has been renamed, expanded somewhat, and given increased attention in an attempt to better address the problems and to help meet local concerns. It is now known as the Old Works/East Anaconda Development Area.

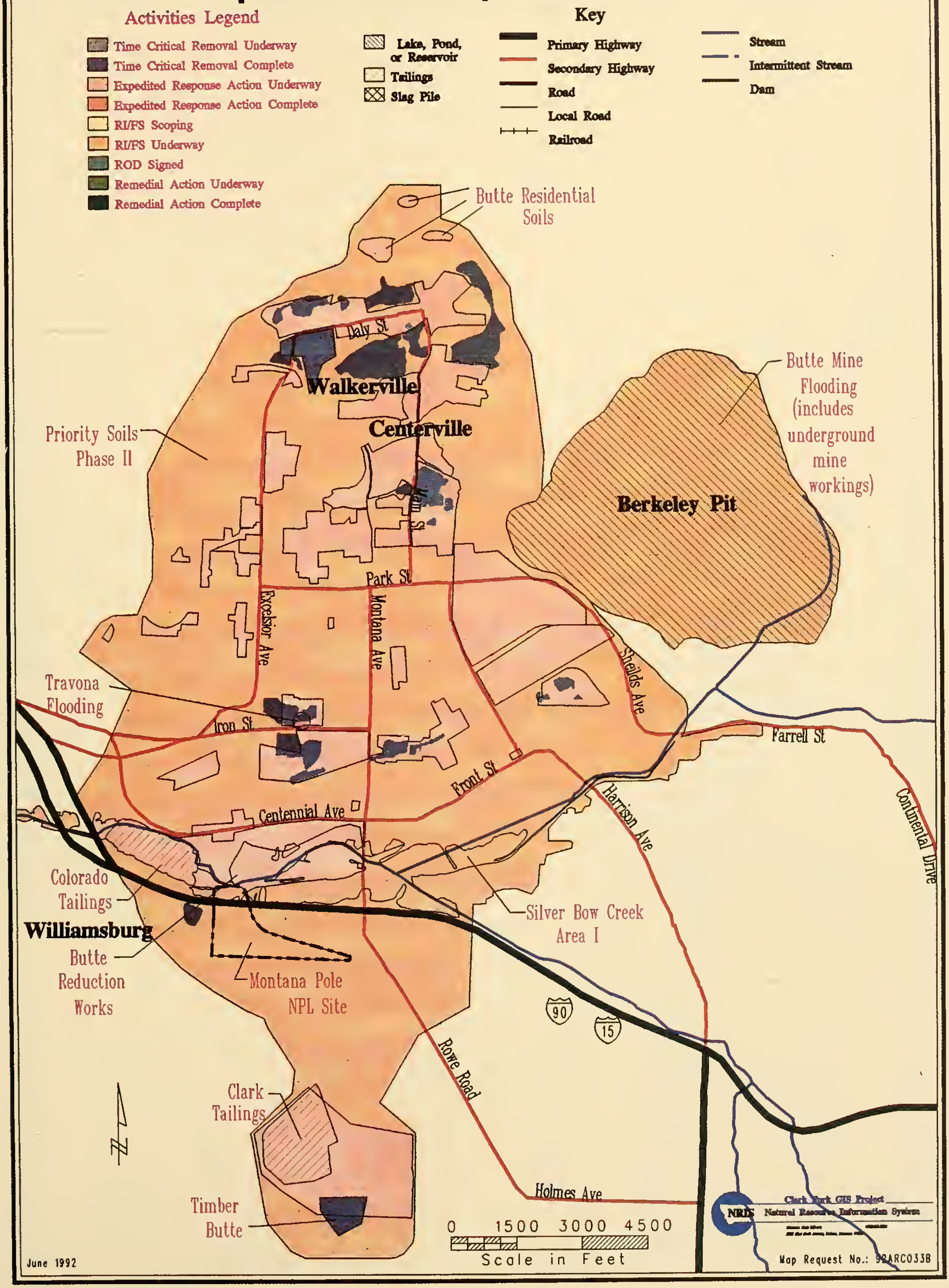
While many of the project schedules have been negotiated and agreed to by the agencies and ARCO, several near-term projects have not. The projects that remain to be negotiated and scheduled in detail include the Butte Priority Soils (both the ERA and RI/FS), the Warm Springs Ponds Inactive Area, the Clark Fork River, the Anaconda Soils, and the Anaconda Regional Water and Wastes. The Butte Priority Soils projects and the Warm Springs Ponds Inactive Area project will be negotiated in 1992 (see attached schedules). The remaining projects will have scoping studies underway to collect necessary long-term information that can then be used to develop a more accurate schedule for completion of the investigations and selection of remedies.

Some projects are considered even more long-term and their schedules are presented as only rough estimates. These long-term projects include Butte Non-Priority Soils and the Butte Active Mine Area. In particular, the Butte Active Mine Area is not slated for any Superfund activity until mining ceases. It is included on the schedule only to show a possible future action. All of the above schedules are subject to change as more information is gained and as resources become available.

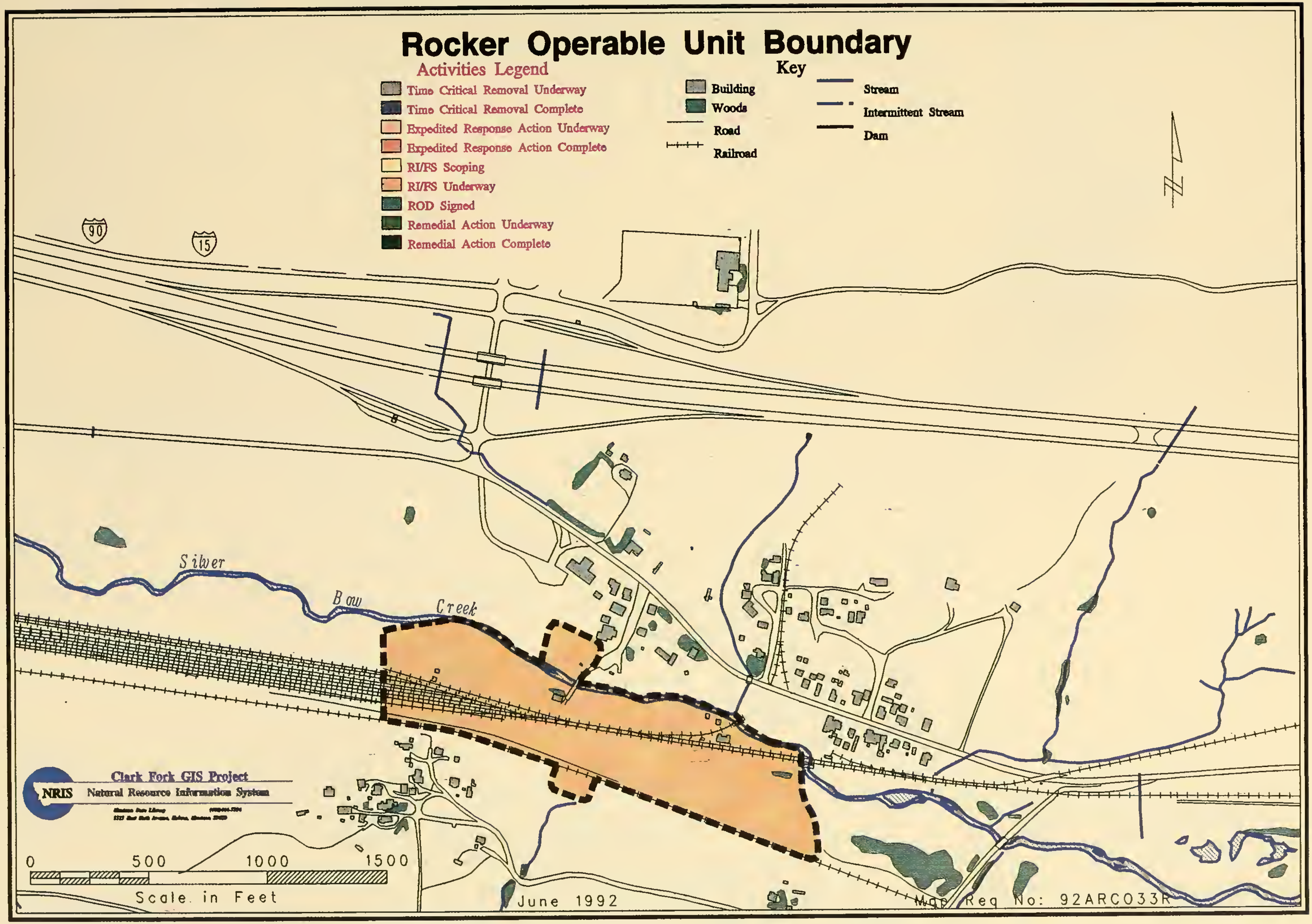
It should be noted that the operation and maintenance phase of many of the projects may continue for an indefinite period of time. In addition, where wastes remain on site and limit some use of the site, there is a requirement to conduct a review of the remedy at 5-year intervals.

APPENDIX A: Operable Unit Site Maps

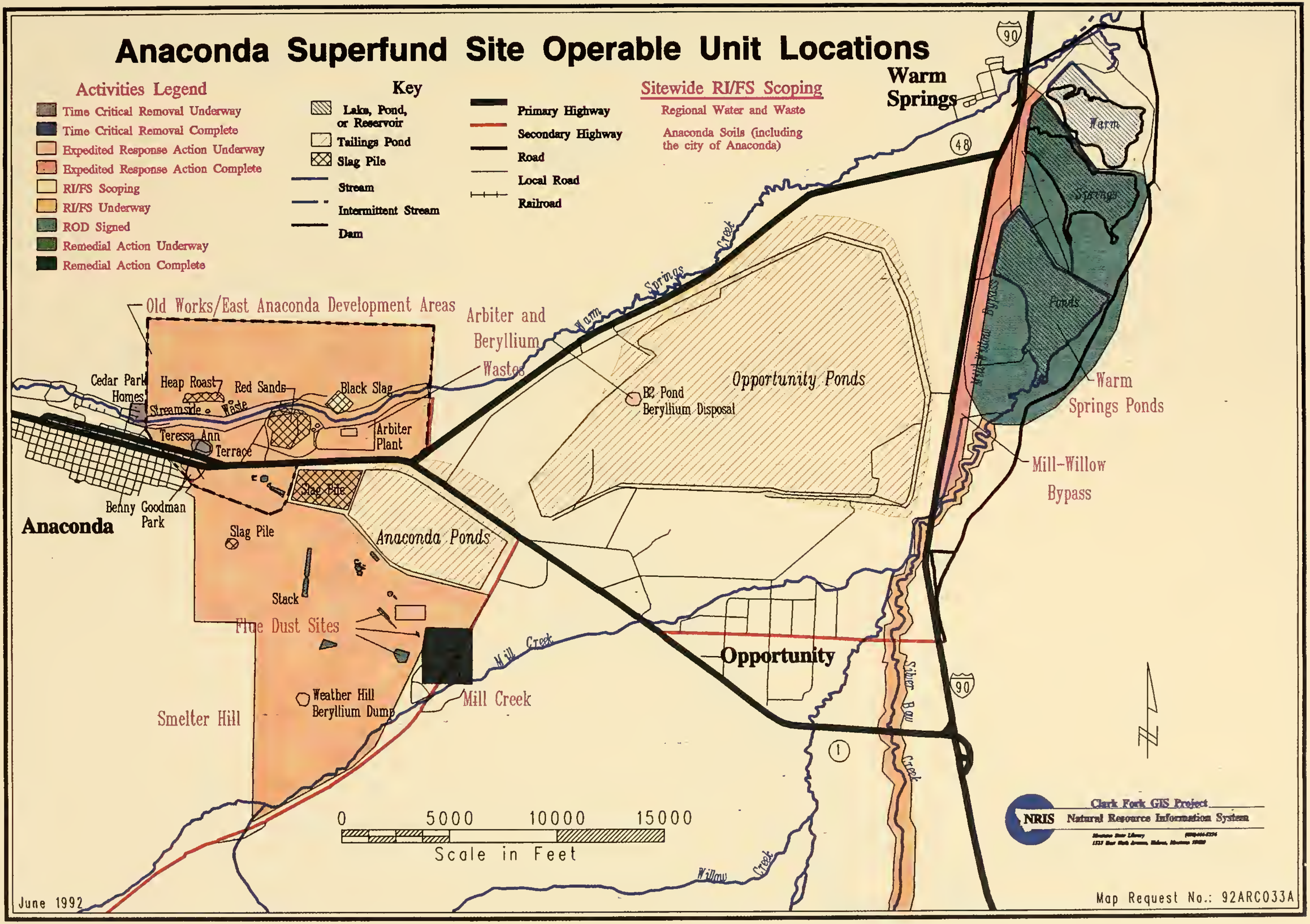
Butte Superfund Site Operable Unit Locations



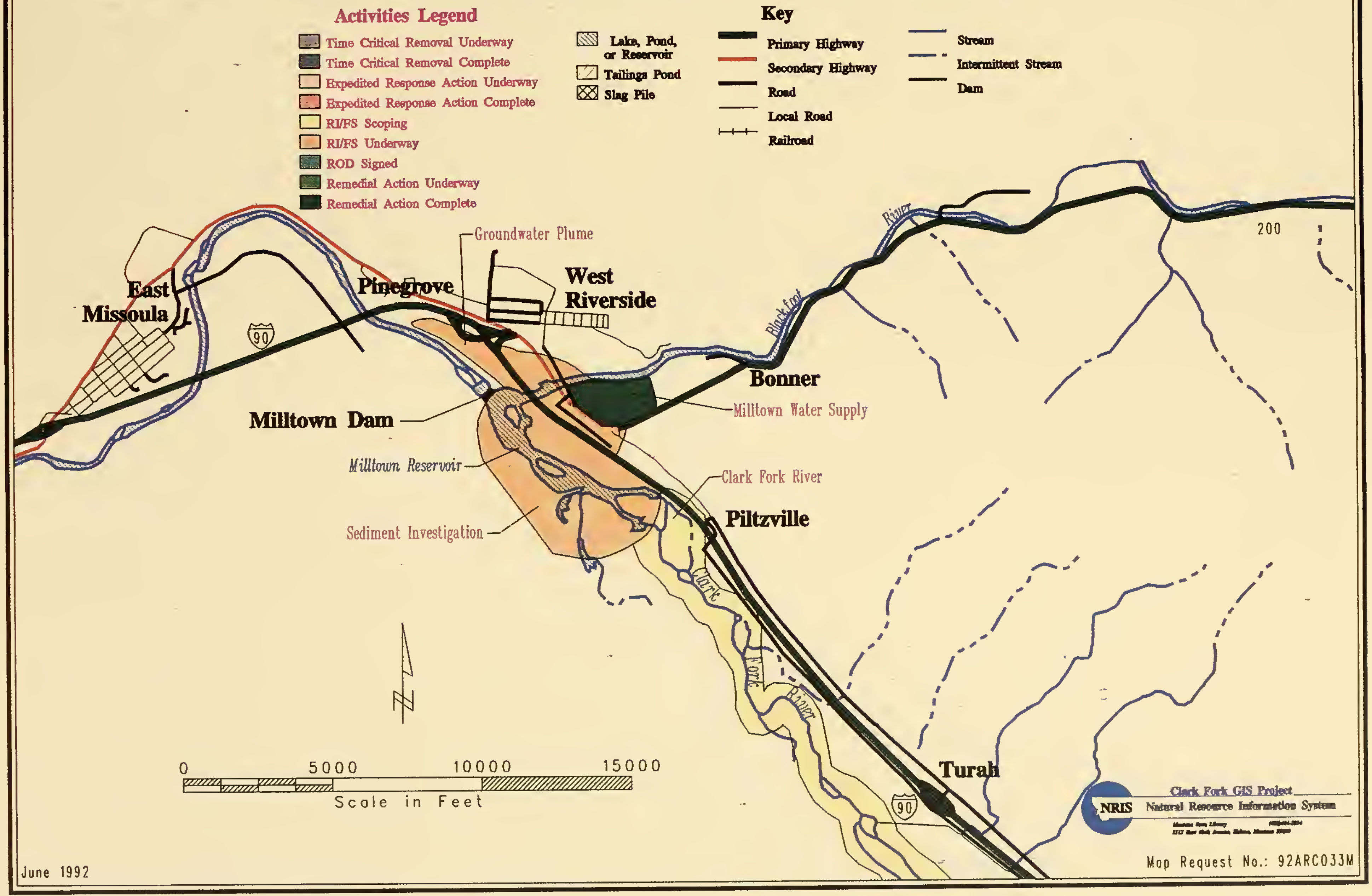
Rocker Operable Unit Boundary



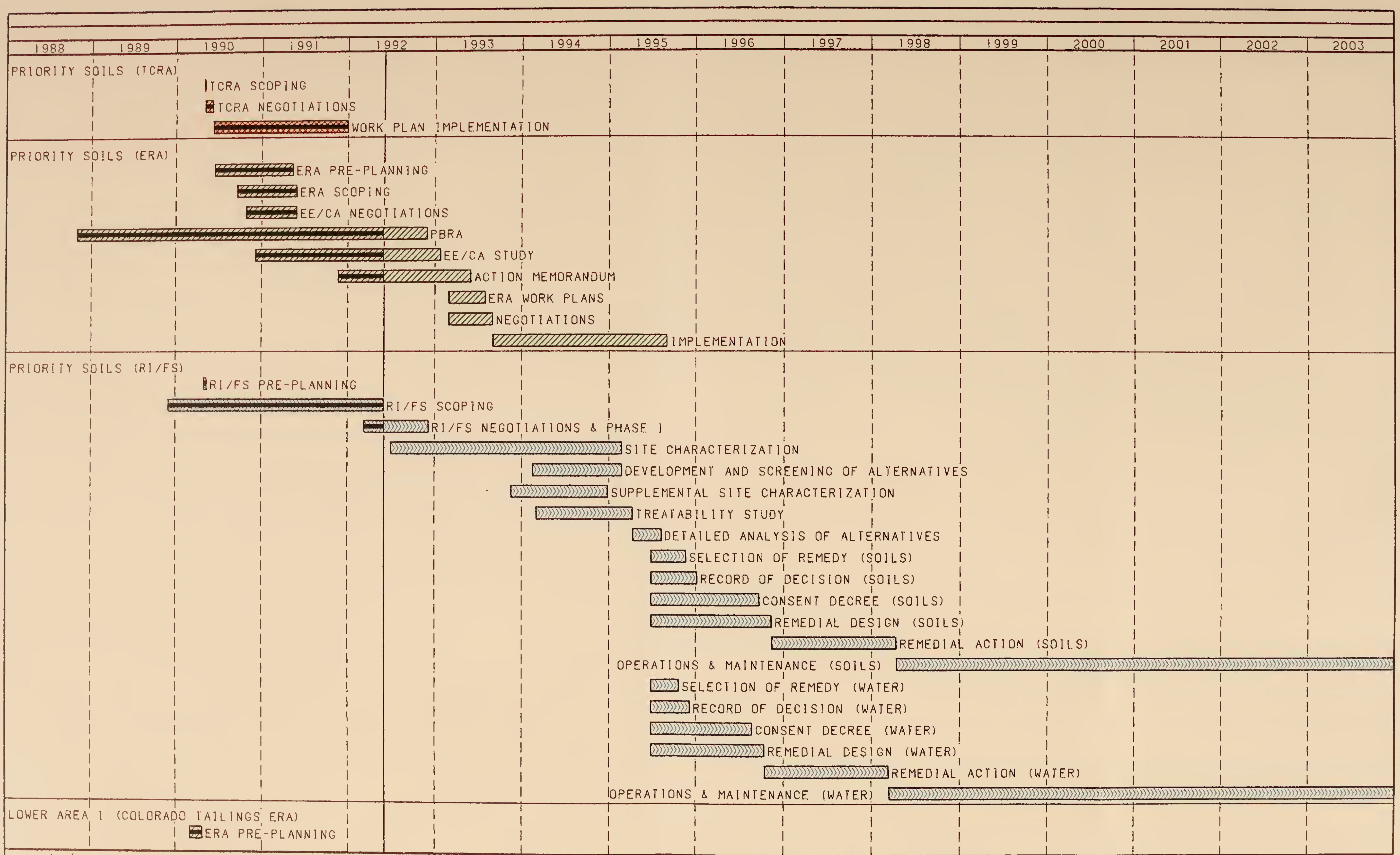
Anaconda Superfund Site Operable Unit Locations



Milltown Reservoir Sediments Superfund Site Operable Unit Locations



APPENDIX B: Updated Schedules for Clark Fork Superfund Site Projects.



Inactive
Activity Bar/Early Dates
Critical Activity
Progress Bar

ACTION
🟥 TIME CRITICAL REMOVAL ACTION
🟩 EXPEDITED RESPONSE ACTION (NON-TIME CRITICAL)
▨ GENERAL RI/FS/RD/RA
▨ ANACONDA REGIONAL ACTIVITIES

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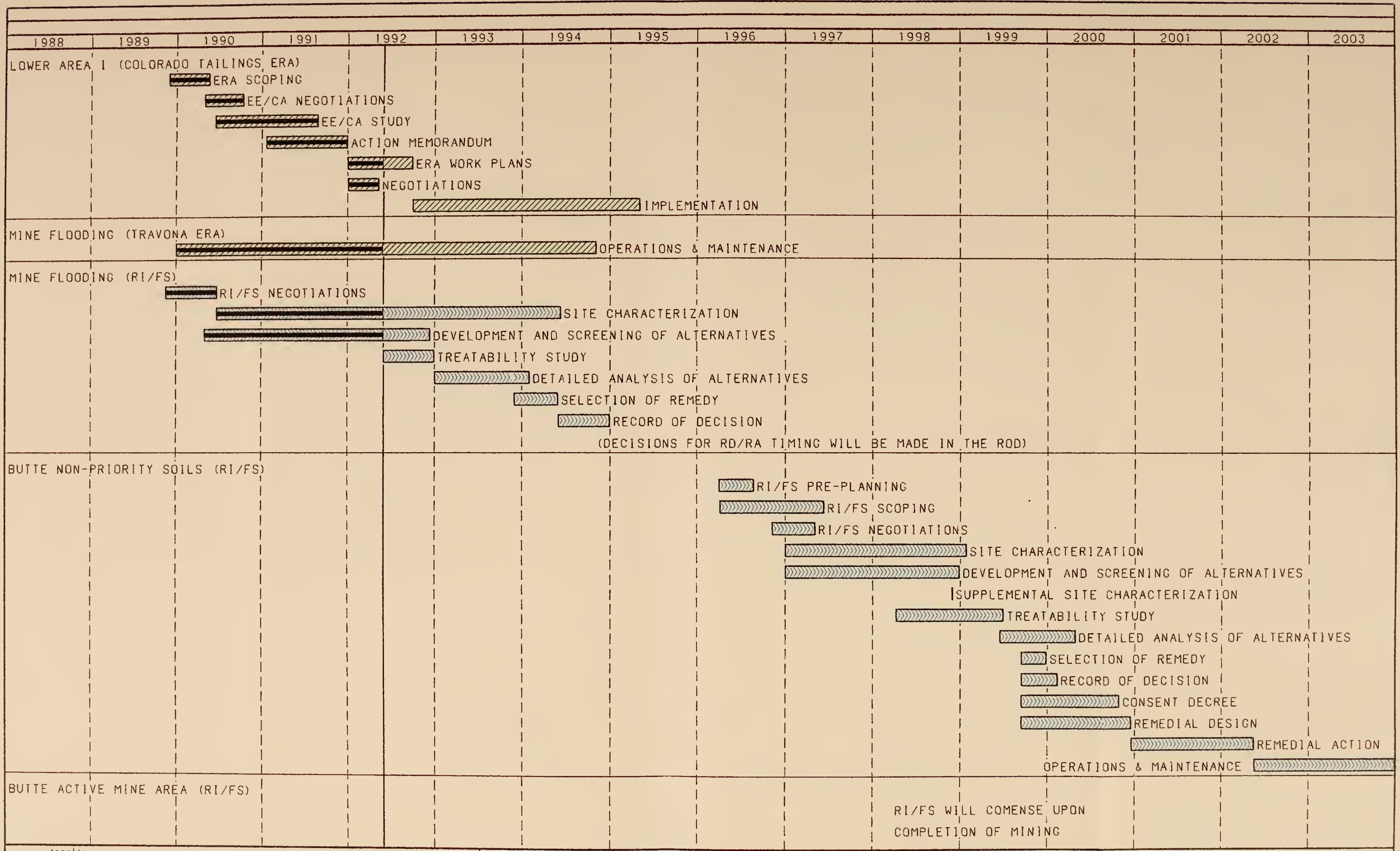
Clark Fork Superfund Sites
Master Plan
Operable Unit Status

Sheet 1 of 7

Project Start : 1JAN85
Project Finish: 31DEC03

Data Date: 1JUN92
Plot Date: 24JUN92

Date	Revision	Checked	Approved



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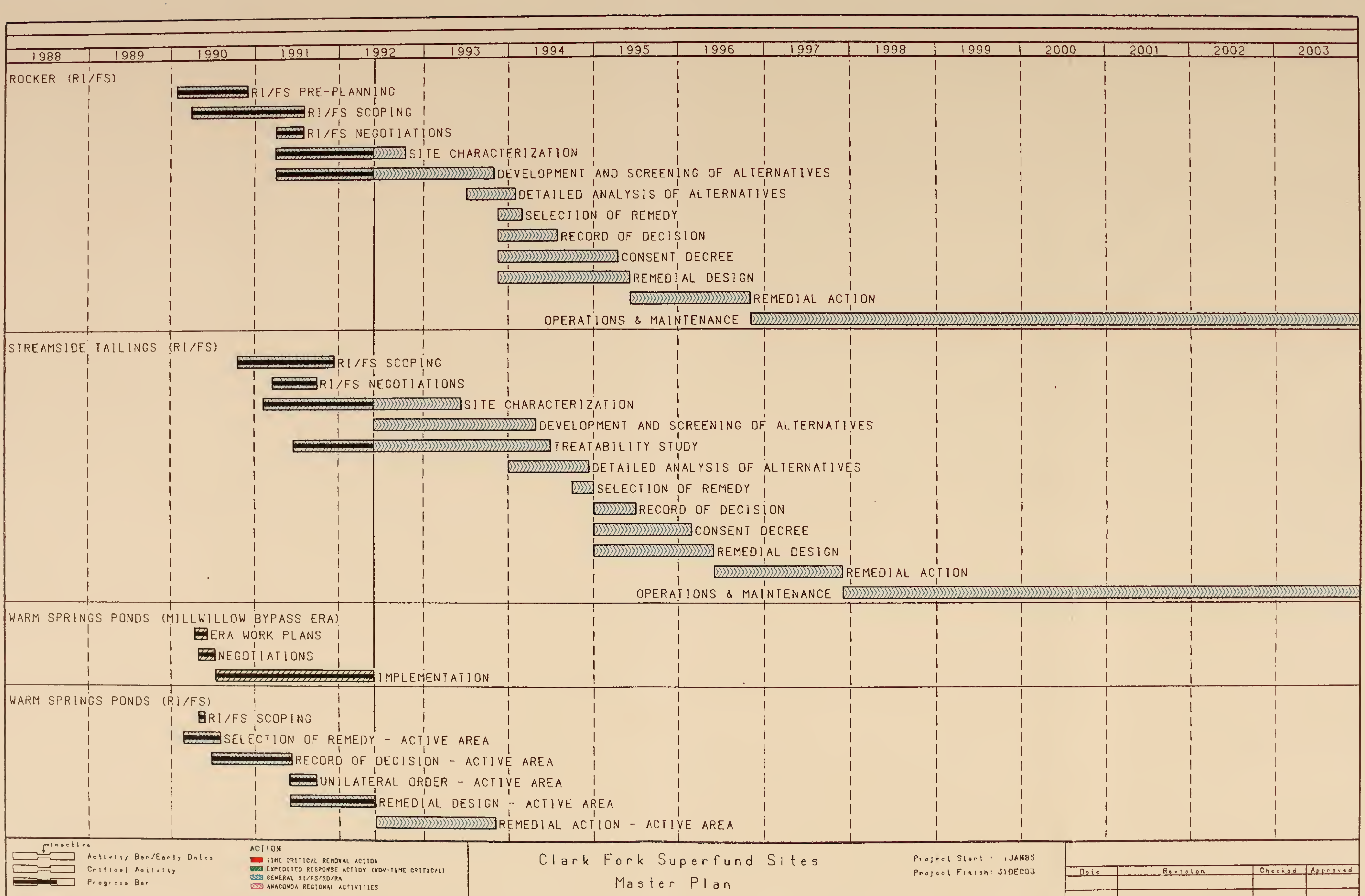

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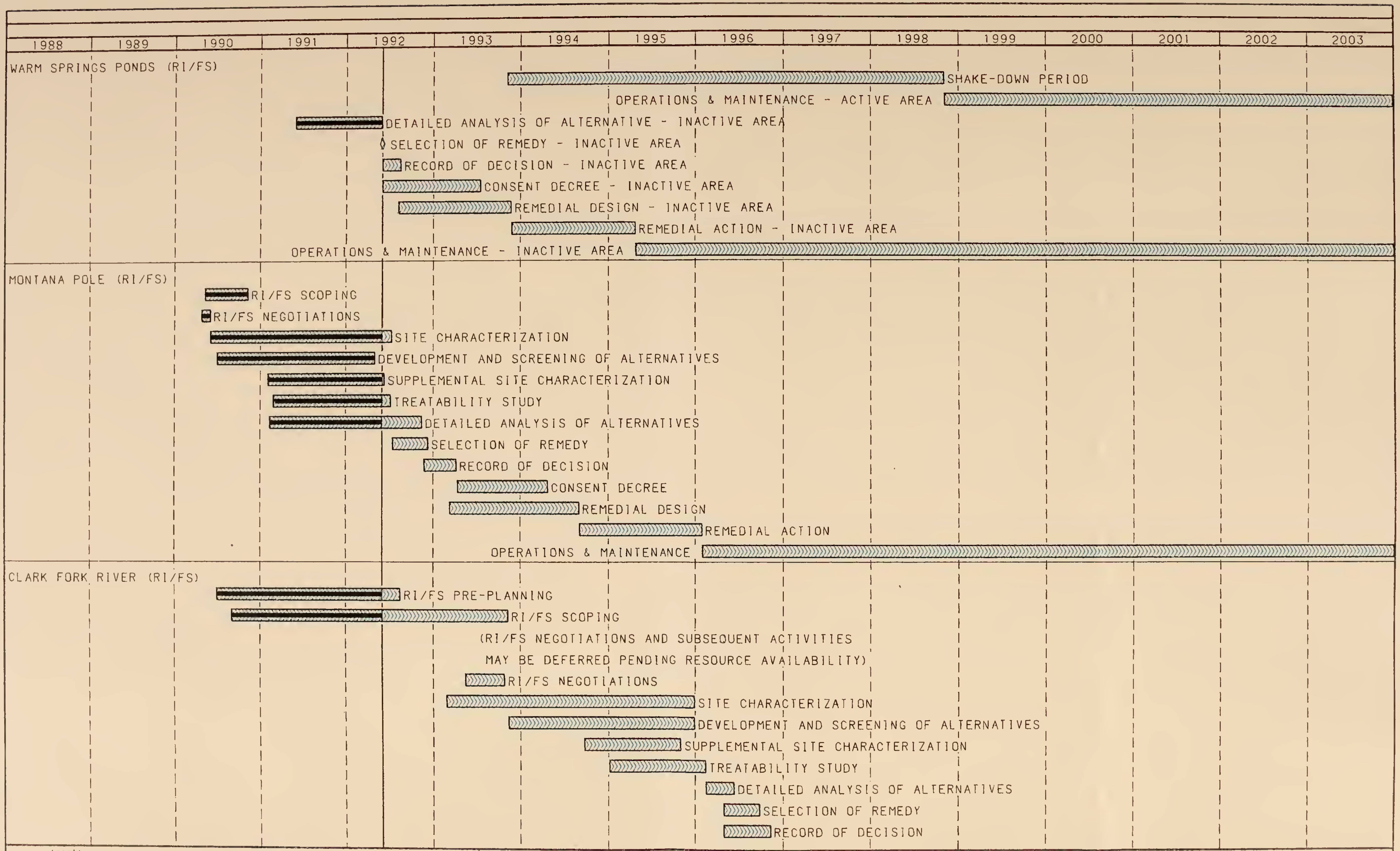

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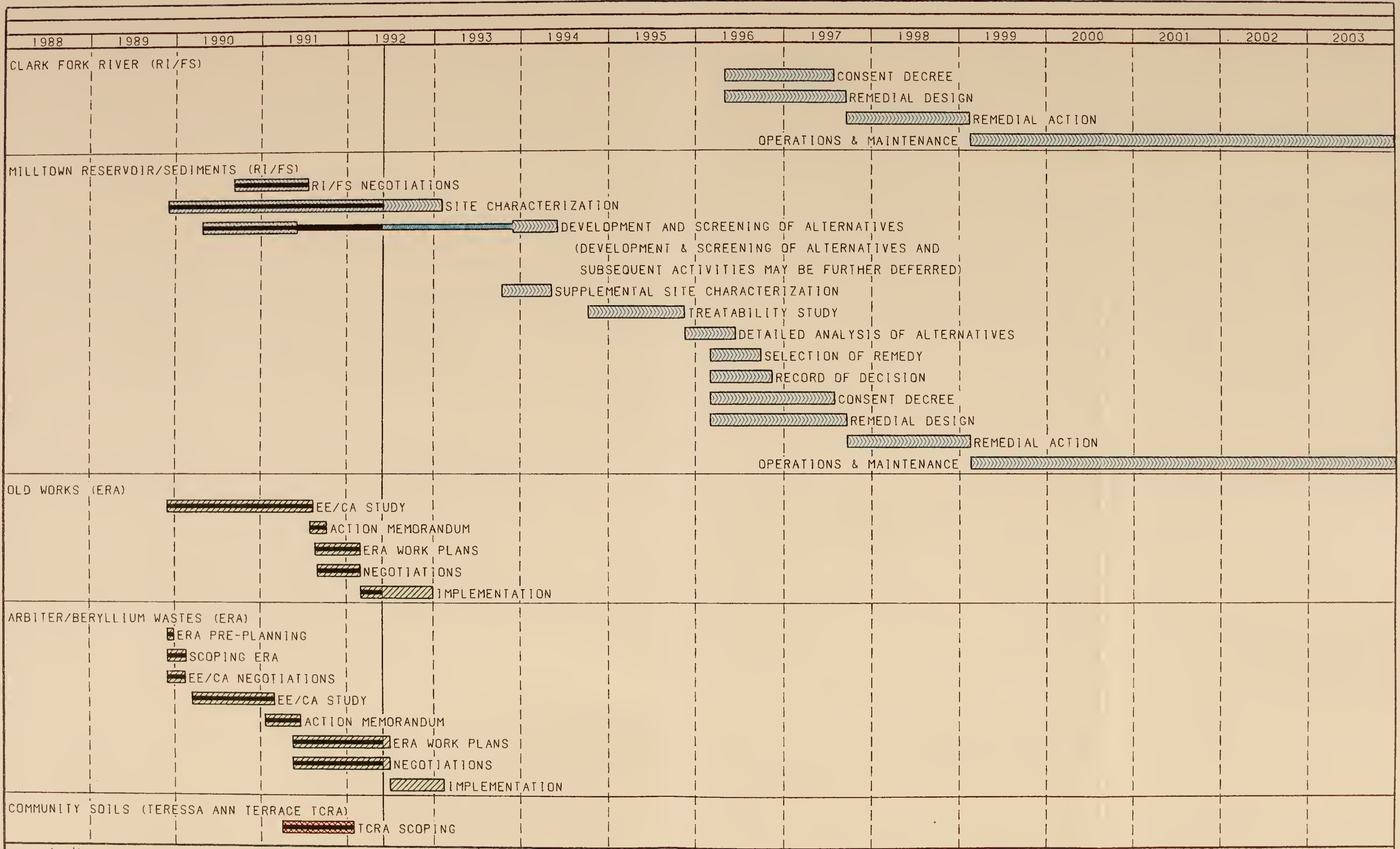

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Critical Activity
Progress Bar

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Sheet 5 of 7

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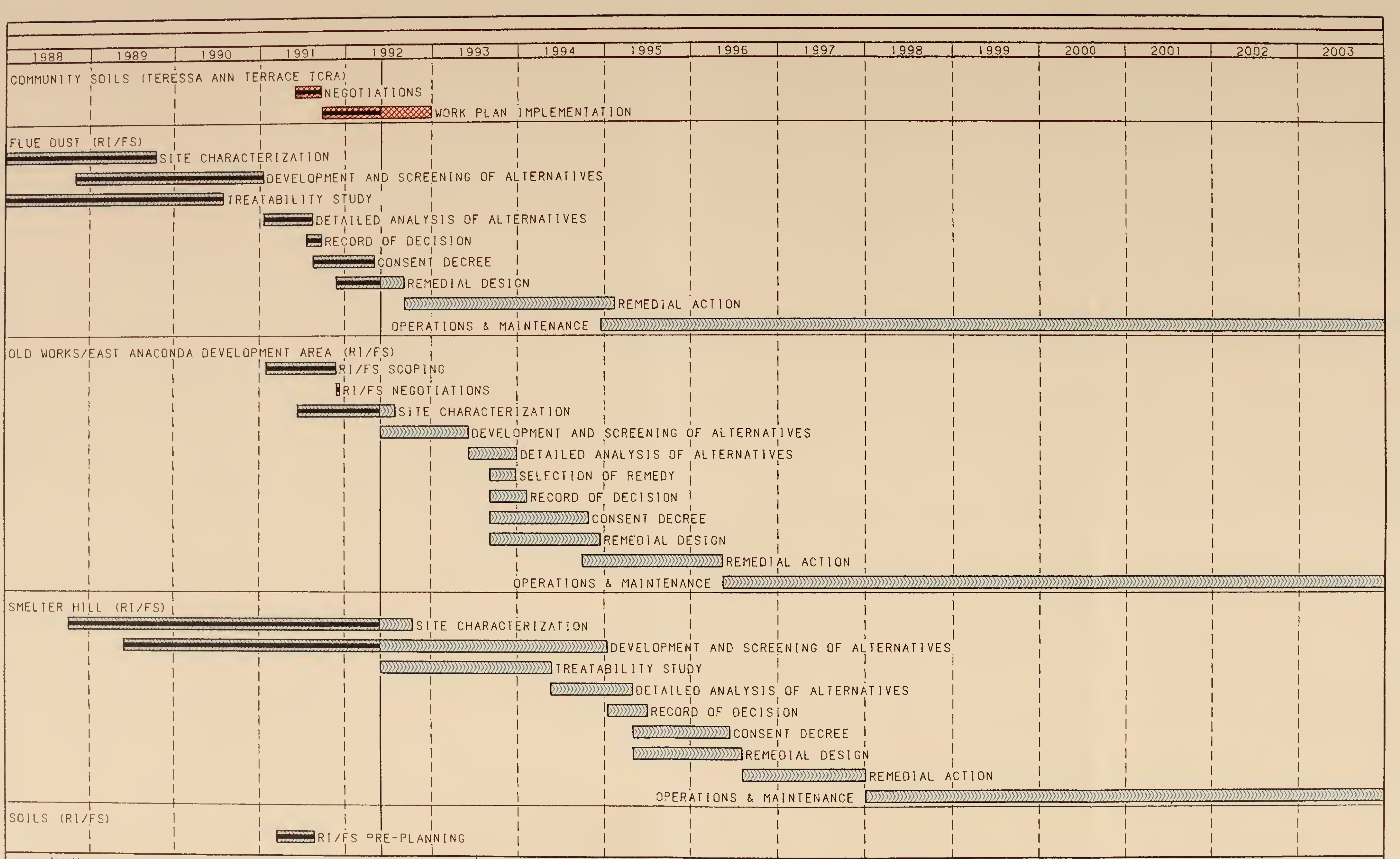

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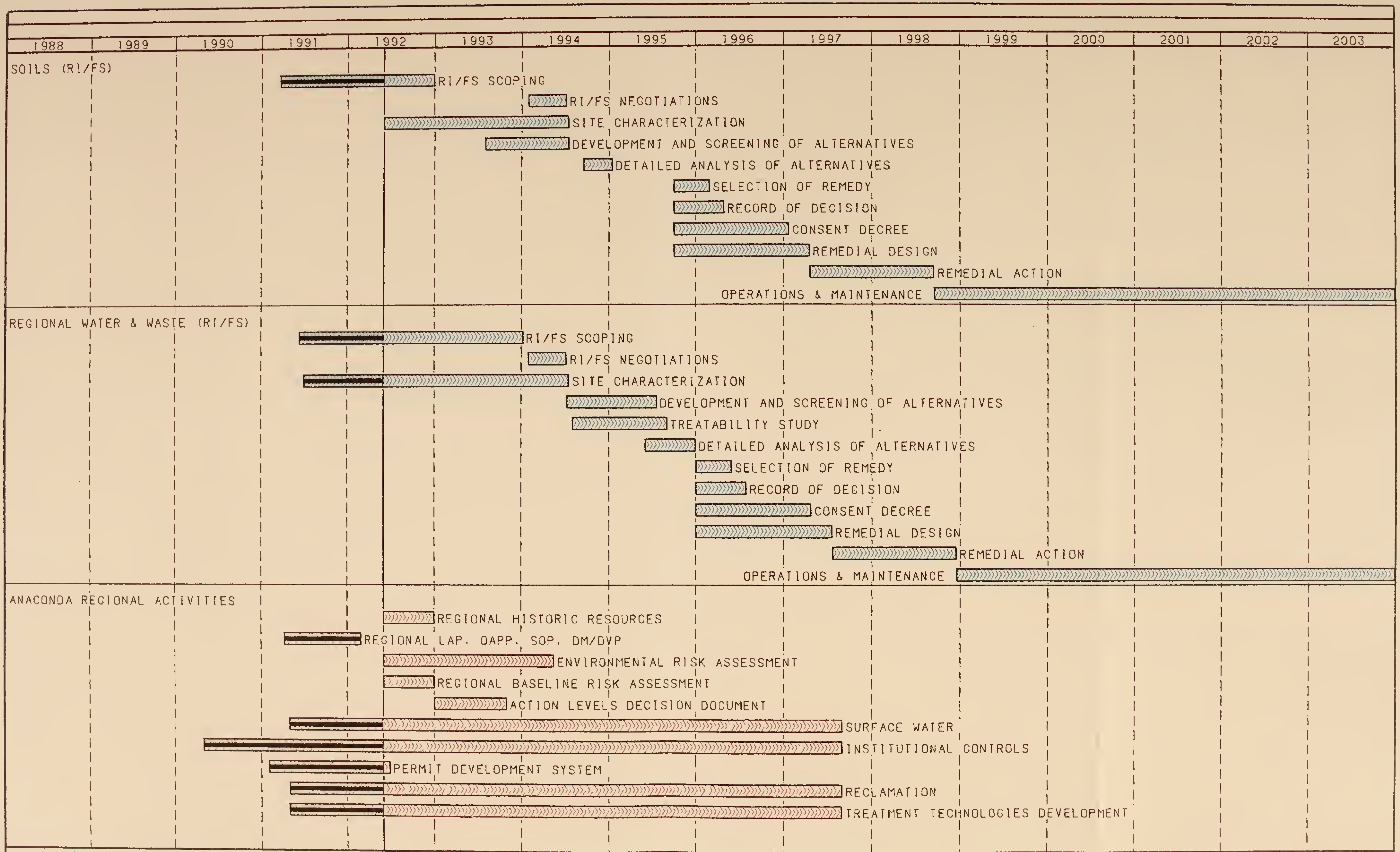

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